



December 14, 2009

Duke Energy  
Miami Fort Generating Station  
11021 Brower Road  
North Bend, OH 45052

Attention: Ms. Sue Wallace  
Chemical Engineer

Re: Results – **December 2009**  
Low-Level Mercury Sampling  
Miami Fort Generating Station  
North Bend, Ohio

In accordance with your request, URS prepared the following letter report transmitting low-level mercury test results for samples collected at the Miami Fort Generating Station located in North Bend, Ohio.

The scope of work involved the sampling of intake and discharge waters from the following sources and analysis of those samples for low-level mercury.

1. River Intake
2. Station 601 (WWT Influent)  
[Samples were collected at this station one detention time before samples collected at Outfall 608]
3. Outfall 608 (WWT Effluent)  
[Samples were collected at this outfall one detention time after samples collected at station 601]
4. Outfall 002 (Pond B Discharge)

Each sample was collected following the required Method 1669: *Sampling Ambient Water for Determination of Trace Metals at EPA Water Quality Criteria Levels* (Sampling Method) and analyzed by Method 1631. At the request of Duke Energy, total metal mercury samples were collected from Station 601 and analyzed by Method 7470A.

Field staff from URS' Cincinnati office conducted the sampling and TestAmerica Laboratories Inc. located in North Canton, Ohio performed the analytical procedures. The analytical procedures included the analyses of a collected sample and duplicate sample (duplicates collected at Outfall 608 and Outfall 002), field blank (field blanks collected at the River Intake, Outfall 608, and Outfall 002), and trip blank.



Duke Energy - MFS  
December 14, 2009  
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The results from the **December 1 and 2, 2009** sampling event are presented in the attached Table 1. A copy of the laboratory report is enclosed with this letter.

--ooOoo--

URS is pleased to provide continued assistance to Duke Energy in the execution of their environmental monitoring requirements. If there are any questions regarding the content of this report, please do not hesitate to contact the undersigned.

Sincerely,

URS Corporation

A handwritten signature in blue ink, appearing to read "Michael A. Wagner", is positioned above the printed name.

Michael A. Wagner  
Project Manager

A handwritten signature in blue ink, appearing to read "Dennis P. Connair", is positioned above the printed name.

Dennis P. Connair, C.P.G.  
Principal

MAW/DPC/Duke Energy-MFS LL Hg 2009  
Job No. 14948701

TABLE 1

ANALYTICAL RESULTS  
LOW-LEVEL MERCURY  
RIVER INTAKE, STATION 601, OUTFALL 608, AND OUTFALL 002 (POND B)  
  
DUKE ENERGY - MIAMI FORT STATION  
NORTH BEND, OHIO

Sample ID	Date Sampled / Results (ng/L, parts per trillion)						
	7/1/09	8/3/09	9/1/09	9/21/09	10/1/09	11/2/09	12/1/09
River Intake	2.3	8.6 B	2.0	NSC	2.3	4.0	1.2
Station 601 (7)	224,000	226,000	NSC	62,400	186,000	NCS	51,400
Station 601 (7)*	NSC	4,600*	58,200*	8,900*	374,000*	NSC	41,300*
Station 601 (7)* [duplicate]	NSC	NSC	NSC	NSC	381,000*	NSC	42,500*
Station 601 (8)	260,000	956,000	NSC	73,000	237,000	576,000	48,600
Station 601 (8)*	NSC	4,800*	172,000*	314,000*	447,000*	124,000*	40,900*
Station 601 (8)*[duplicate]	NSC	NSC	NSC	41,600*	NSC	111,000*	NSC
Outfall 608	110	123 B	63.4	57.7	79.2	183	46.5
Outfall 608 [duplicate]	108	122 B	62.2	58.2	87.1	342	47.0
APB-002	NC	5.8	2.5	NSC	3.6	4.8	6.2
APB-002 [duplicate]	NC	5.3	2.4	NSC	3.8	4.5	5.6
Field Blank (RI-FB)	<0.50	2.8	<0.50	NSC	<0.50	<0.50	0.5
Field Blank (WWT-FB)	<0.50	1.0	0.72	<0.50	0.89	0.62	<0.50
Field Blank (AP-FB)	NC	<0.50	<0.50	NSC	<0.50	<0.50	<0.50
Trip Blank	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50

Samples collected by URS

Samples analyzed by TestAmerica of North Canton, Ohio

NC - Not Collected. (Ash Pond B Outfall 002 collected quarterly, August and December)

NSC - No Sample Collected [11/2/09 Unit 7 outage]

\* = Total mercury analysis utilizing Method 7470A [results converted from ug/L (parts per billion) to ng/L]

B = Low-level mercury detected in associated field blank collected at sampling location

## ANALYTICAL REPORT

PROJECT NO. 14948701

MIAMI FORT LLHG 2009

Lot #: A9L030458

Sue Wallace

Duke Energy Corporation  
PO Box 5385  
Cincinnati, OH 45201

TESTAMERICA LABORATORIES, INC.



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Kenneth J. Kuzior  
Project Manager  
ken.kuzior@testamericainc.com

Approved for release.  
Kenneth J. Kuzior  
Project Manager  
12/14/2009 9:58 AM

December 11, 2009

TestAmerica Laboratories, Inc.

TestAmerica North Canton 4101 Shuffel Street NW, North Canton, OH 44720

Tel (330)497-9396 Fax (330)497-0772 [www.testamericainc.com](http://www.testamericainc.com)



## **CASE NARRATIVE**

A9L030458

The following report contains the analytical results for thirteen water samples and one quality control sample submitted to TestAmerica North Canton by Cinergy from the MIAMI FORT LLHG 2009 Site, project number 14948701. The samples were received December 03, 2009, according to documented sample acceptance procedures.

TestAmerica utilizes USEPA approved methods in all analytical work. The samples presented in this report were analyzed for the parameter(s) listed on the analytical methods summary page in accordance with the method(s) indicated. Preliminary results were provided to Candance Bonham, Mike Wagner, and Sue Wallace on December 09, 2009. A summary of QC data for these analyses is included at the back of the report.

TestAmerica North Canton attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the applicable methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

All parameters were evaluated to the reporting limit.

Please refer to the Quality Control Elements Narrative following this case narrative for additional quality control information.

If you have any questions, please call the Project Manager, Kenneth J. Kuzior, at 330-497-9396.

This report is sequentially paginated. The final page of the report is labeled as "END OF REPORT."

## **SUPPLEMENTAL QC INFORMATION**

### **SAMPLE RECEIVING**

The temperatures of the coolers upon sample receipt were 18.7 and 19.3°C, with no coolant present.

## **CASE NARRATIVE (continued)**

### **SAMPLE RECEIVING (continued)**

See TestAmerica's Cooler Receipt Form for additional information.

### **METALS**

Matrix spike recovery and relative percent difference (RPD) data were not calculated for some analytes for batch(es) 9341511 due to the sample concentration reading greater than four times the spike amount. See the Matrix Spike Report for the affected analytes which will be flagged with "NC, MSB".

## QUALITY CONTROL ELEMENTS NARRATIVE

TestAmerica conducts a quality assurance/quality control (QA/QC) program designed to provide scientifically valid and legally defensible data. Toward this end, several types of quality control indicators are incorporated into the QA/QC program, which is described in detail in QA Policy, QA-003. These indicators are introduced into the sample testing process to provide a mechanism for the assessment of the analytical data. Program or agency specific requirements take precedence over the requirements listed in this narrative.

### QC BATCH

Environmental samples are taken through the testing process in groups called QUALITY CONTROL BATCHES (QC batches). A QC batch contains up to twenty environmental samples of a similar matrix (water, soil) that are processed using the same reagents and standards. TestAmerica North Canton requires that each environmental sample be associated with a QC batch.

Several quality control samples are included in each QC batch and are processed identically to the twenty environmental samples.

For SW846/RCRA methods, QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) pair or a MATRIX SPIKE/SAMPLE DUPLICATE (MS/DU) pair. If there is insufficient sample to perform an MS/MSD or an MS/DU, then a LABORATORY CONTROL SAMPLE DUPLICATE (LCSD) is included in the QC batch.

For 600 series/CWA methods, QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE (MS). An MS is prepared and analyzed at a 10% frequency for GC Methods and at a 5% frequency for GC/MS methods.

### LABORATORY CONTROL SAMPLE

The Laboratory Control Sample is a QC sample that is created by adding known concentrations of a full or partial set of target analytes to a matrix similar to that of the environmental samples in the QC batch. Multi peak responders may not be included in the target spike list due to co-elution. The LCS analyte recovery results are used to monitor the analytical process and provide evidence that the laboratory is performing the method within acceptable guidelines. All control analytes indicated by a bold type in the LCS must meet acceptance criteria. Failure to meet the established recovery guidelines requires the reparation and reanalysis of all samples in the QC batch. Comparison of only the failed parameters from the first batch are evaluated. The only exception to the rework requirement is that if the LCS recoveries are biased high and the associated sample is ND (non-detected) for the parameter(s) of interest, the batch is acceptable.

At times, a Laboratory Control Sample Duplicate (LCSD) is also included in the QC batch. An LCSD is a QC sample that is created and handled identically to the LCS. Analyte recovery data from the LCSD is assessed in the same way as that of the LCS. The LCSD recoveries, together with the LCS recoveries, are used to determine the reproducibility (precision) of the analytical system. Precision data are expressed as relative percent differences (RPDs). If the RPD fails for an LCS/LCSD and yet the recoveries are within acceptance criteria, the batch is still acceptable.

### METHOD BLANK

The Method Blank is a QC sample consisting of all the reagents used in analyzing the environmental samples contained in the QC batch. Method Blank results are used to determine if interference or contamination in the analytical system could lead to the reporting of false positive data or elevated analyte concentrations. All target analytes must be below the reporting limits (RL) or the associated sample(s) must be ND except under the following circumstances:

- Common organic contaminants may be present at concentrations up to 5 times the reporting limits. Common metals contaminants may be present at concentrations up to 2 times the reporting limit, or the reported blank concentration must be twenty fold less than the concentration reported in the associated environmental samples. (See common laboratory contaminants listed in the table.)

<u>Volatile (GC or GC/MS)</u>	<u>Semivolatile (GC/MS)</u>	<u>Metals ICP-MS</u>	<u>Metals ICP Trace</u>
Methylene Chloride, Acetone, 2-Butanone	Phthalate Esters	Copper, Iron, Zinc, Lead, Calcium, Magnesium, Potassium, Sodium, Barium, Chromium, Manganese	Copper, Iron, Zinc, Lead

## QUALITY CONTROL ELEMENTS NARRATIVE (continued)

- Organic blanks will be accepted if compounds detected in the blank are present in the associated samples at levels 10 times the blank level. Inorganic blanks will be accepted if elements detected in the blank are present in the associated samples at 20 times the blank level.
- Blanks will be accepted if the compounds/elements detected are not present in any of the associated environmental samples.

Failure to meet these Method Blank criteria requires the reparation and reanalysis of all samples in the QC batch.

### MATRIX SPIKE/MATRIX SPIKE DUPLICATE

A Matrix Spike and a Matrix Spike Duplicate are a pair of environmental samples to which known concentrations of a full or partial set of target analytes are added. The MS/MSD results are determined in the same manner as the results of the environmental sample used to prepare the MS/MSD. The analyte recoveries and the relative percent differences (RPDs) of the recoveries are calculated and used to evaluate the effect of the sample matrix on the analytical results. Due to the potential variability of the matrix of each sample, the MS/MSD results may not have an immediate bearing on any samples except the one spiked; therefore, the associated batch MS/MSD may not reflect the same compounds as the samples contained in the analytical report. When these MS/MSD results fail to meet acceptance criteria, the data is evaluated. If the LCS is within acceptance criteria, the batch is considered acceptable.

For certain methods, a Matrix Spike/Sample Duplicate (MS/DU) may be included in the QC batch in place of the MS/MSD. For the parameters (i.e. pH, ignitability) where it is not possible to prepare a spiked sample, a Sample Duplicate may be included in the QC batch. However, a Sample Duplicate is less likely to provide usable precision statistics depending on the likelihood of finding concentrations below the standard reporting limit. When the Sample Duplicate result fails to meet acceptance criteria, the data is evaluated.

For certain methods (600 series methods/CWA), a Matrix Spike is required in place of a Matrix Spike/Matrix Spike Duplicate (MS/MSD) or Matrix Spike/Sample Duplicate (MS/DU).

The acceptance criteria do not apply to samples that are diluted.

### SURROGATE COMPOUNDS

In addition to these batch-related QC indicators, each organic environmental and QC sample is spiked with surrogate compounds. Surrogates are organic chemicals that behave similarly to the analytes of interest and that are rarely present in the environment. Surrogate recoveries are used to monitor the individual performance of a sample in the analytical system.

If surrogate recoveries are biased high in the LCS, LCSD, or the Method Blank, and the associated sample(s) are ND, the batch is acceptable. Otherwise, if the LCS, LCSD, or Method Blank surrogate(s) fail to meet recovery criteria, the entire sample batch is reprepared and reanalyzed. If the surrogate recoveries are outside criteria for environmental samples, the samples will be reprepared and reanalyzed unless there is objective evidence of matrix interference or if the sample dilution is greater than the threshold outlined in the associated method SOP.

The acceptance criteria do not apply to samples that are diluted. All other surrogate recoveries will be reported.

For the GC/MS BNA methods, the surrogate criterion is that two of the three surrogates for each fraction must meet acceptance criteria. The third surrogate must have a recovery of ten percent or greater.

For the Pesticide and PCB methods, the surrogate criterion is that one of two surrogate compounds must meet acceptance criteria. The second surrogate must have a recovery of 10% or greater.



### TestAmerica Certifications and Approvals:

The laboratory is certified for the analytes listed on the documents below. These are available upon request.  
California (#01144CA), Connecticut (#PH-0590), Florida (#E87225),  
Illinois (#200004), Kansas (#E10336), Minnesota (#39-999-348), New Jersey (#OH001), New York (#10975), Nevada  
(#OH-000482008A), OhioVAP (#CL0024), Pennsylvania (#008), West Virginia (#210), Wisconsin (#999518190), NAVY,  
ARMY, USDA Soil Permit

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## EXECUTIVE SUMMARY - Detection Highlights

A9L030458

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>ANALYTICAL METHOD</u>
601(8)WWT 12/01/09 17:50 001				
Mercury	48600	20000	ng/L	CFR136A 1631E
601(8)WWT TOT 12/01/09 17:45 002				
Mercury	40.9	1.0	ug/L	SW846 7470A
601(7)WWT 12/01/09 17:55 003				
Mercury	51400	20000	ng/L	CFR136A 1631E
601(7)WWT TOT 12/01/09 18:00 004				
Mercury	41.3	1.0	ug/L	SW846 7470A
601(7)WWT TOT DUP 12/01/09 18:05 005				
Mercury	42.5	1.0	ug/L	SW846 7470A
RI 12/01/09 17:25 006				
Mercury	1.2	0.50	ng/L	CFR136A 1631E
RI FB 12/01/09 17:15 007				
Mercury	0.50	0.50	ng/L	CFR136A 1631E
OUTFALL 002 12/02/09 09:20 008				
Mercury	6.2	0.50	ng/L	CFR136A 1631E
OUTFALL 002 DUP 12/02/09 09:25 009				
Mercury	5.6	0.50	ng/L	CFR136A 1631E
608 WWT 12/02/09 08:25 012				
Mercury	46.5	5.0	ng/L	CFR136A 1631E
608 WWT DUP 12/02/09 08:30 013				
Mercury	47.0	5.0	ng/L	CFR136A 1631E

# ANALYTICAL METHODS SUMMARY

A9L030458

<u>PARAMETER</u>	<u>ANALYTICAL METHOD</u>
Mercury in Liquid Waste (Manual Cold-Vapor)	SW846 7470A
Mercury, Low Level Mercury, CVA Fluorescence	CFR136A 1631E

## References:

- CFR136A "Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.
- SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

## SAMPLE SUMMARY

A9L030458

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
LQFAG	001	601(8)WWT	12/01/09	17:50
LQFAR	002	601(8)WWT TOT	12/01/09	17:45
LQFAT	003	601(7)WWT	12/01/09	17:55
LQFAV	004	601(7)WWT TOT	12/01/09	18:00
LQFAW	005	601(7)WWT TOT DUP	12/01/09	18:05
LQFA0	006	RI	12/01/09	17:25
LQFA1	007	RI FB	12/01/09	17:15
LQFA3	008	OUTFALL 002	12/02/09	09:20
LQFA4	009	OUTFALL 002 DUP	12/02/09	09:25
LQFA5	010	OUTFALL 002 FB	12/02/09	09:15
LQFA8	011	608 WWT FB	12/02/09	08:20
LQFA9	012	608 WWT	12/02/09	08:25
LQFCE	013	608 WWT DUP	12/02/09	08:30
LQFCH	014	TB (TRIP BLANK)	12/02/09	

### NOTE (S) :

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Duke Energy Corporation

Client Sample ID: 601(8)WWT

TOTAL Metals

Lot-Sample #...: A9L030458-001

Matrix.....: WG

Date Sampled...: 12/01/09 17:50 Date Received...: 12/03/09

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9341511						
Mercury	48600	20000	ng/L	CFR136A 1631E	12/07-12/08/09	LQFAG1AA
		Dilution Factor: 40000				

Duke Energy Corporation

Client Sample ID: 601(8)WWT TOT

TOTAL Metals

Lot-Sample #...: A9L030458-002

Matrix.....: WG

Date Sampled...: 12/01/09 17:45 Date Received...: 12/03/09

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION-</u> <u>ANALYSIS DATE</u>	<u>WORK</u> <u>ORDER #</u>
Prep Batch #...: 9338013						
Mercury	40.9	1.0	ug/L	SW846 7470A	12/04-12/08/09	LQFAR1AA
		Dilution Factor: 5				

Duke Energy Corporation

Client Sample ID: 601(7)WWT

TOTAL Metals

Lot-Sample #...: A9L030458-003

Matrix.....: WG

Date Sampled...: 12/01/09 17:55 Date Received...: 12/03/09

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
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Prep Batch #...: 9341511

Mercury	51400	20000	ng/L	CFR136A 1631E	12/07-12/08/09	LQFAT1AA
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Dilution Factor: 40000

Duke Energy Corporation

Client Sample ID: 601(7)WWT TOT

TOTAL Metals

Lot-Sample #...: A9L030458-004

Matrix.....: WG

Date Sampled...: 12/01/09 18:00 Date Received...: 12/03/09

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION-</u> <u>ANALYSIS DATE</u>	<u>WORK</u> <u>ORDER #</u>
Prep Batch #...: 9338013						
Mercury	41.3	1.0	ug/L	SW846 7470A	12/04-12/08/09	LQFAV1AA
		Dilution Factor: 5				

Duke Energy Corporation

Client Sample ID: 601(7)WWT TOT DUP

TOTAL Metals

Lot-Sample #...: A9L030458-005

Matrix.....: WG

Date Sampled...: 12/01/09 18:05 Date Received...: 12/03/09

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION-</u> <u>ANALYSIS DATE</u>	<u>WORK</u> <u>ORDER #</u>
Prep Batch #...: 9338013						
Mercury	42.5	1.0	ug/L	SW846 7470A	12/04-12/08/09	LQFAW1AA
		Dilution Factor: 5				



Duke Energy Corporation

Client Sample ID: RI

TOTAL Metals

Lot-Sample #...: A9L030458-006

Matrix.....: WG

Date Sampled...: 12/01/09 17:25 Date Received...: 12/03/09

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION-</u> <u>ANALYSIS DATE</u>	<u>WORK</u> <u>ORDER #</u>
Prep Batch #...: 9341511						
Mercury	1.2	0.50	ng/L	CFR136A 1631E	12/07-12/08/09	LQFA01AA
		Dilution Factor: 1				

Duke Energy Corporation

Client Sample ID: RI FB

TOTAL Metals

Lot-Sample #...: A9L030458-007

Matrix.....: WQ

Date Sampled...: 12/01/09 17:15 Date Received...: 12/03/09

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Prep Batch #...: 9341511						
Mercury	0.50	0.50	ng/L	CFR136A 1631E	12/07-12/08/09	LQFA11AA
		Dilution Factor: 1				

Duke Energy Corporation

Client Sample ID: OUTFALL 002

TOTAL Metals

Lot-Sample #...: A9L030458-008

Matrix.....: WG

Date Sampled...: 12/02/09 09:20 Date Received...: 12/03/09

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
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Prep Batch #...: 9341511

Mercury	6.2	0.50	ng/L	CFR136A 1631E	12/07-12/08/09	LQFA31AA
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Dilution Factor: 1

Duke Energy Corporation

Client Sample ID: OUTFALL 002 DUP

TOTAL Metals

Lot-Sample #...: A9L030458-009

Matrix.....: WG

Date Sampled...: 12/02/09 09:25 Date Received...: 12/03/09

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9341511						
Mercury	5.6	0.50	ng/L	CFR136A 1631E	12/07-12/08/09	LQFA41AA
		Dilution Factor: 1				

Duke Energy Corporation

Client Sample ID: OUTFALL 002 FB

TOTAL Metals

Lot-Sample #...: A9L030458-010

Matrix.....: WQ

Date Sampled...: 12/02/09 09:15 Date Received...: 12/03/09

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9341511						
Mercury	ND	0.50	ng/L	CFR136A 1631E	12/07-12/08/09	LQFA51AA
		Dilution Factor: 1				

Duke Energy Corporation

Client Sample ID: 608 WWT FB

TOTAL Metals

Lot-Sample #....: A9L030458-011

Matrix.....: WQ

Date Sampled...: 12/02/09 08:20 Date Received...: 12/03/09

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Prep Batch #....: 9341511						
Mercury	ND	0.50	ng/L	CFR136A 1631E	12/07-12/08/09	LQFA81AA
		Dilution Factor: 1				

Duke Energy Corporation

Client Sample ID: 608 WWT

TOTAL Metals

Lot-Sample #...: A9L030458-012

Matrix.....: WG

Date Sampled...: 12/02/09 08:25 Date Received...: 12/03/09

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Prep Batch #...: 9341511						
Mercury	46.5	5.0	ng/L	CFR136A 1631E	12/07-12/08/09	LQFA91AA
		Dilution Factor: 10				

Duke Energy Corporation

Client Sample ID: 608 WWT DUP

TOTAL Metals

Lot-Sample #...: A9L030458-013

Matrix.....: WG

Date Sampled...: 12/02/09 08:30 Date Received...: 12/03/09

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION-</u> <u>ANALYSIS DATE</u>	<u>WORK</u> <u>ORDER #</u>
Prep Batch #...: 9341511						
Mercury	47.0	5.0	ng/L	CFR136A 1631E	12/07-12/08/09	LQFCE1AA
		Dilution Factor: 10				



Duke Energy Corporation

Client Sample ID: TB(TRIP BLANK)

TOTAL Metals

Lot-Sample #...: A9L030458-014

Matrix.....: WQ

Date Sampled...: 12/02/09

Date Received...: 12/03/09

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9341511						
Mercury	ND	0.50	ng/L	CFR136A 1631E	12/07-12/08/09	LQFCH1AA
		Dilution Factor: 1				

# ***QUALITY CONTROL SECTION***

# METHOD BLANK REPORT

## TOTAL Metals

Client Lot #...: A9L030458

Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: A9L040000-013 Prep Batch #...: 9338013						
Mercury	ND	0.20	ug/L	SW846 7470A	12/04/09	LQG711A9
Dilution Factor: 1						

MB Lot-Sample #: A9L070000-511 Prep Batch #...: 9341511						
Mercury	ND	0.50	ng/L	CFR136A 1631E	12/07-12/08/09	LQM181AA
Dilution Factor: 1						

### NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

# LABORATORY CONTROL SAMPLE EVALUATION REPORT

## TOTAL Metals

Client Lot #...: A9L030458

Matrix.....: WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
-----------	---------------------	--------------------	--------	-------------------------------	--------------

LCS Lot-Sample#: A9L040000-013 Prep Batch #...: 9338013

Mercury 109 (81 - 123) SW846 7470A 12/04/09 LQG711CU

Dilution Factor: 1

LCS Lot-Sample#: A9L070000-511 Prep Batch #...: 9341511

Mercury 94 (77 - 125) CFR136A 1631E 12/07-12/08/09 LQM181AC

Dilution Factor: 1

### NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

# MATRIX SPIKE SAMPLE EVALUATION REPORT

## TOTAL Metals

Client Lot #...: A9L030458

Matrix.....: WATER

Date Sampled...: 12/02/09 17:00 Date Received...: 12/03/09

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD LIMITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: A9L030548-001 Prep Batch #...: 9338013						
Mercury	112	(69 - 134)		SW846 7470A	12/04/09	LQF1M1C8
	121	(69 - 134) 7.9	(0-20)	SW846 7470A	12/04/09	LQF1M1C9
Dilution Factor: 1						

### NOTE (S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

# MATRIX SPIKE SAMPLE EVALUATION REPORT

## TOTAL Metals

Client Lot #...: A9L030458

Matrix.....: WG

Date Sampled...: 12/02/09 09:20 Date Received...: 12/03/09

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD LIMITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: A9L030458-008 Prep Batch #...: 9341511						
Mercury	98	(71 - 125)		CFR136A 1631E	12/07-12/08/09	LQFA31AC
	105	(71 - 125)	2.8 (0-24)	CFR136A 1631E	12/07-12/08/09	LQFA31AD
Dilution Factor: 1						

### NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

# MATRIX SPIKE SAMPLE EVALUATION REPORT

## TOTAL Metals

Client Lot #...: A9L030458

Matrix.....: WATER

Date Sampled...: 12/02/09 11:35 Date Received...: 12/03/09

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD LIMITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
-----------	---------------------	--------------------	---------------	--------	-------------------------------	-----------------

MS Lot-Sample #: A9L030553-001 Prep Batch #...: 9341511

Mercury	NC,MSB	(71 - 125)		CFR136A 1631E	12/07-12/09/09	LQF191AC
	NC,MSB	(71 - 125)	(0-24)	CFR136A 1631E	12/07-12/09/09	LQF191AD

Dilution Factor: 10

### NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

NC The recovery and/or RPD were not calculated.

MSB The recovery and RPD may be outside control limits because the sample amount was greater than 4X the spike amount.

## Chain of Custody Record

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratory location:

Regulatory program:

☐ DW☐ NPDES☐ RCRA☐ Other

Client Contact

Company Name:

Duke Energy

Address:

Miami Fort Station

City/State/Zip:

North Bend, OH

Phone:

(513) 651-3440

Project Name:

Miami Fort L Hg 2009

Project Number:

14448701

P.O. #

Client Project Manager:

Mike Wagner (VWS Corp)

Telephone:

(513) 651-7490

E-mail:

mike.wagner@vws corp.com

Site Contact:

John Alton

Telephone:

(513) 651-3440

Lab Contact:

Telephone:

TestAmerica Laboratories, Inc.

COC No:

1 of 2 COCs

Analyses

TAT if different from below

☐ 3 weeks☐ 2 weeks☐ 1 week☐ 2 days☐ 1 day

Sample Identification

Sample Date

Sample Time

Air

Aqueous

Sediment

Solid

Other:

H2SO4

HNO3

HCl

NaOH

ZnAc/NaOH

Unpres

Other:

Sample Specific Notes /  
Special Instructions:

12-1-09

1750

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

601(8) WWT TOT

1745

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

601(7) WWT TOT

1755

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

601(7) WWT TOT

1800

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

601(7) WWT TOT

1805

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

RT F8

1715

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

outfall 002

0920

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

outfall 002 DVE

0925

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

outfall 002 F8

0915

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

Possible Hazard Identification

☒ Non-Hazard☐ Flammable☐ Skin Irritant☐ Poison B☒ Unknown☐ Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)☒ Return to Client☐ Disposal By Lab☐ Archive For☐ Months☐ Months☐ Months☐ Months☐ Months☐ Months

Requested by:

Company:

Date/Time:

Relinquished by:

Company:

Date/Time:

VWS Corp

12-02-09 / 1630

M. B. Alton

TA

12-29-09 / 1630

Company:

Date/Time:

Relinquished by:

Company:

Date/Time:

Company:

Date/Time:

Relinquished by:

Company:

Date/Time:



## Chain of Custody Record

**TestAmerica**  
 THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratory location:

Regulatory program:

☐ DW☐ NPDES☐ RCRA☐ Other

Client Contact

Company Name:

Duke Energy

Address:

Miami Fort Station

City/State/Zip:

North Bend OH

Phone:

(513) 651-3440

Project Name:

Miami Fort L Hy 2009

Project Number:

1444701.00100

P.O.#

Client Project Manager:

Mike Wagner (UES Corp.)

Telephone:

(513) 651-3440

E-mail:

mike.wagner@uescorp.com

TAT if different from below

Sue.wallace@duke-energy.com

Method of Shipment/Carrier:

Carrier

Shipping/Tracking No:

Site Contact:

John Allen

Telephone:

513-651-3440

Lab Contact:

Telephone:

TestAmerica Laboratories, Inc.

COC No:

2 of 2 COCs

Analyses

Sample Identification

Sample Date

Sample Time

Air

Aqueous

Sediment

Solid

Other:

H2SO4

HNO3

HCl

NaOH

ZnAc/NaOH

Uapres

Other:

Sample Specific Notes/  
Special Instructions:

G08 WWT PB

11-2-09

0620

X

G08 WWT

0625

X

G08 WWT OVF

0630

X

TG (Trip Blank)

X

Possible Hazard Identification

☐ Non-Hazard☐ Flammable☐ Skin Irritant☐ Poisonous☒ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client☒ Dispose By Lab☐ Archive For

Months

Special Instructions/QC Requirements &amp; Comments:

Relinquished by:

[Signature]

Company:

UES Corp.

Date/Time:

11-02-09 / 1630

Received by:

[Signature]

Company:

TA

Date/Time:

11-30-09 / 1030

Relinquished by:

[Signature]

Company:

TA

Date/Time:

11-2-09 / 1635

Received in Laboratory by:

[Signature]

Company:

TA DC

Date/Time:

11-30-09 0800

**TestAmerica Cooler Receipt Form/Narrative**  
**North Canton Facility**

Lot Number: A9L030458

Client Duke Energy Project Miami Fore By: [Signature]  
Cooler Received on 12/3/04 Opened on 12/3/04 (Signature)  
FedEx ☒ UPS ☐ DHL ☐ FAS ☐ Stetson ☐ Client Drop Off ☐ TestAmerica Courier ☐ Other \_\_\_\_\_  
TestAmerica Cooler # \_\_\_\_\_ Multiple Coolers ☒ Foam Box ☐ Client Cooler ☐ Other \_\_\_\_\_  
1. Were custody seals on the outside of the cooler(s)? Yes ☒ No ☐ Intact? Yes ☒ No ☐ NA ☐  
If YES, Quantity 2 Quantity Unsalvageable \_\_\_\_\_  
Were custody seals on the outside of cooler(s) signed and dated? Yes ☒ No ☐ NA ☐  
Were custody seals on the bottle(s)? Yes ☐ No ☒  
If YES, are there any exceptions? \_\_\_\_\_  
2. Shippers' packing slip attached to the cooler(s)? Yes ☒ No ☐  
3. Did custody papers accompany the sample(s)? Yes ☒ No ☐ Relinquished by client? Yes ☒ No ☐  
4. Were the custody papers signed in the appropriate place? Yes ☒ No ☐  
5. Packing material used: Bubble Wrap ☒ Foam ☐ None ☐ Other \_\_\_\_\_  
6. Cooler temperature upon receipt \_\_\_\_\_ °C See back of form for multiple coolers/temps ☒  
METHOD: IR ☒ Other ☐ \_\_\_\_\_  
COOLANT: Wet Ice ☐ Blue Ice ☐ Dry Ice ☐ Water ☐ None ☒  
7. Did all bottles arrive in good condition (Unbroken)? Yes ☒ No ☐  
8. Could all bottle labels be reconciled with the COC? Yes ☒ No ☐  
9. Were sample(s) at the correct pH upon receipt? Yes ☐ No ☒ NA ☐  
10. Were correct bottle(s) used for the test(s) indicated? Yes ☒ No ☐  
11. Were air bubbles >6 mm in any VOA vials? Yes ☐ No ☐ NA ☒  
12. Sufficient quantity received to perform indicated analyses? Yes ☒ No ☐  
13. Was a trip blank present in the cooler(s)? Yes ☒ No ☐ Were VOAs on the COC? Yes ☐ No ☒  
Contacted PM \_\_\_\_\_ Date \_\_\_\_\_ by \_\_\_\_\_ via Verbal ☐ Voice Mail ☐ Other ☐  
Concerning \_\_\_\_\_

**14. CHAIN OF CUSTODY**

The following discrepancies occurred:

High Temp OK for LLHG + water metals  
Received 4x40 LLHG Kit empty. All samples are  
accounted. Will dispose of properly.

**15. SAMPLE CONDITION**

Sample(s) \_\_\_\_\_ were received after the recommended holding time had expired.  
Sample(s) \_\_\_\_\_ were received in a broken container.  
Sample(s) \_\_\_\_\_ were received with bubble >6 mm in diameter. (Notify PM)

**16. SAMPLE PRESERVATION**

Sample(s) All total Hg 7470 were further preserved. were further preserved in Sample  
Receiving to meet recommended pH level(s). Nitric Acid Lot# 031909-HNO<sub>3</sub>; Sulfuric Acid Lot# 082509-H<sub>2</sub>SO<sub>4</sub>; Sodium  
Hydroxide Lot# 100108 -NaOH; Hydrochloric Acid Lot# 092006-HCl; Sodium Hydroxide and Zinc Acetate Lot# 100108-  
(CH<sub>3</sub>COO)<sub>2</sub>Zn/NaOH. What time was preservative added to sample(s)? \_\_\_\_\_

Client ID	pH	Date	Initials
601 (8) WWT	< 2	12/3/04	9
601 (7) WWT	< 2		
601 (7) WWT Dup	< 2		

[illegible]

***END OF REPORT***